



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/777,201

02/05/2001

Timothy M. Schmidl

TI-31285

3034

7590

05/06/2005

RONALD O. NEERINGS
TEXAS INSTRUMENTS INC.
P.O. BOX 655474, M/S 3999
DALLAS, TX 75263

EXAMINER

VINCENT, DAVID ROBERT

ART UNIT

PAPER NUMBER

3628

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/777,201	Applicant(s) SCHMIDL ET AL.	
	Examiner David R Vincent	Art Unit 3628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11, 13-27, 30-33 and 35-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-27, 30-33, 35 and 36 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 13, 37, 38, 40, 41 and 46 is/are rejected.
- 7) ☒ Claim(s) 39 and 42-45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: ~~2861~~ 3628

Response to Amendment

Applicant's arguments filed 2/3/05 pertaining to e.g., claims 1 and 37, have been fully considered but they are not persuasive.

In re pg. 13, the applicant argues Weddle fails to disclose receiving fading parameters and selecting frequencies based on quality.

In response, Weddle clearly discloses fading parameters but does not use the same phrase. One of ordinary skill would understand that when Weddle discloses transmitting a series of probe packets at various frequencies in order to determine the propagation characteristics and the path loss (SNR), Weddle is in fact obtaining the fading parameters and the frequency channel quality associated with the frequencies (see e.g., link quality, col. 4, lines 52-60; propagation characteristics, col. 5, lines 30-34; col. 6, lines 1-4; col. 10, lines 52-58; examining the quality of received signals, col. 10, lines 24-30; using the SNR, col. 12, lines 12-45; propagation conditions, col. 16, lines 20-25; quality of frequencies, col. 18, lines 15-22; characteristics of the environment, col. 18, lines 23-29; and quality of transmissions received, col. 18, lines 45-52).

In re pg. 13, the applicant argues Weddle appears to use the same data rate.

Art Unit: 2661

In response, Weddle does disclose a first and second mode with a first and second data rate (adjusting the data rate based on effects of fading, namely the SNR, col. 10, lines 24-35; col. 12, lines 12-45; or col. 18, lines 40-52).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 9, 11, 13, 37, 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Weddle (US 5,359,595).

Weddle discloses selecting frequency bands (col. 1, lines 31-64; col. 2; col. 4, lines 20-25; and see below response to arguments) between at least two transceivers (col. 3, lines 3-10), using probe packets (cols 4-6, especially col. 4, line 34-col. 5, line 34; col. 8, lines 54-67 and see below response to arguments), generating and transmitting and/or receiving quality data (cols. 1-6, especially col. 1, lines 31-64; col. 2, lines 15-22; or col. 4, lines 54-63; col. 11, lines 6-22), plurality of probe frequencies (packets being sent at various frequencies and analyzed, e.g., col. 11, lines 6-67 and see below response to arguments), frequencies are distributed evenly across a

Art Unit: 2661

bandwidth (e.g., col. 11, lines 28-46), frequencies relate to number of probe packets and using a sequence (using a packet for each frequency, e.g., col. 11, lines 36-67; or col. 7, lines 48-57; frequency index, col. 4 lines 34-63), determining offset (reads on knowing what frequency in band, col. 11, lines 28-35 radios do not use a large plurality of crystals/oscillators they simply use offsets by using e.g., divider circuits), correlation information (not further defined, reads on using CRC process, e.g., col. 12, line 11-col 13, line 9), packets include data indicative of band (col. 8, lines 54-67; col. 4, line 34-col. 5, line 56; col. 2, lines 1-9), transmitting selection packets (Fig. 4-9, e.g., announcing, Fig. 4), sequence of frequencies is a portion of sequence of probe frequencies (e.g., col. 11, lines 28-46; col. 7, lines 48-57; frequency index, col. 4 lines 34-63), an input (e.g., antenna or circuitry leading to controllers in transceivers, Fig. 8), using a mapper (using index, library or sequence, e.g., col. 11, lines 28-46; col. 7, lines 48-57; frequency index, col. 4 lines 34-63), controller (100, 104, Fig. 8 or col. 11, lines 42-46), first period, second period (Figs. 4-7), define periods (using a specific protocol such as TDMA the units setup communications with each other, col. 3, lines 44-67; col. 4, line 34-col. 5, line 19), communicating rate higher than transmitting rate (54, 56, 58, Fig. 3), fading parameters

Art Unit: 2661

produce quality data (propagation effects, col. 6, lines 1-14; adjusting the data rate based on effects of fading, namely the SNR, col. 10, lines 24-35; col. 12, lines 12-45; or col. 18, lines 40-52; propagation characteristics of environment, col. 10, lines 53-59; col. 16, lines 20-36), and a probe packet can be a normal packet (Fig. 3; col. 4, line 67-col. 5, line 2).

Response to Arguments

Weddle does disclose a first and second mode with a first and second data rate (adjusting the data rate based on effects of fading, namely the SNR, col. 10, lines 24-35; col. 12, lines 12-45; or col. 18, lines 40-52). Meaning the first data rate is based on e.g., 75 bps then the fading parameters are obtained by finding out what the propagation or path losses (obtaining the SNR), and the second data rate can be used, e.g., 150 bps. Clearly this new data rate can be specifically for selection of the new frequency (col. 6, lines 56-61; col. 7, lines 48-57; col. 11, lines 6-15) which received less path loss due to fading (propagation effects). This is what almost all of the Weddle patent is directed to achieving (selecting a better frequency which receives less fading and higher SNR and then using a higher bit rate for the better or newly found frequency).

Weddle also discloses a plurality of probe frequencies (col. 5, lines 1-56, especially 20-34; col. 6, lines 36-44; col.

Art Unit: 2661

16, lines 20-36; col. 18, lines 40-52) within an available bandwidth (col. 18, lines 40-52).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weddle, as set forth above.

However, Weddle fails to particularly call for the details of using a pseudo random sequence.

Since Weddle discloses using various combinations of sequences (col. 11, lines 36-67; or col. 7, lines 48-57; frequency index, col. 4 lines 34-63; col. 16, lines 37-68), it would have been obvious to use a pseudo random sequence.

Claim Rejections - 35 USC § 103

3. Claims 38, 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weddle, as set forth above, in view of Mahany (US 2004/0077353).

However, Although Weddle discloses adjusting rates based on S/N, (col. 10, lines 24-67), Weddle fails to particularly call

Art Unit: 2661

for the details of fading and using various modulation and coding schemes.

As shown in Figs. 1B, 10-14, 21, 22A-25, 26A-27, Mahany teaches using a polling packet (section 94), selecting frequencies (section 12), optimizing communications based on noise (sections 22 and 23), details of fading (sections 86, 88-91, 96), using various modulation (sections 10, 156, 167-178, 187-188; Table 1, pg. 14) and coding schemes/rates (section 96; Table 1, pg. 14), other modes of operation (section 178).

It would have been obvious to further define the propagation characteristics of the environment (col. 6, lines 1-14; col. 10, lines 53-59; col. 16, lines 20-36) as fading details and to include how when the fading is more severe, the S/R and received power levels go down. Doing merely makes it clear that one is accounting for a traveling transceiver/mobile. Since e.g., Weddle discloses adjusting rates based on (S/N, col. 10, lines 24-67) it would have been obvious that by adding various forms of modulation and coding, Weddle can achieve even more robust communications.

4. Claims 39, 42-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2661

REASONS FOR ALLOWANCE

5. The following is an Examiner's statement of reasons for allowance: Claims 14-27, 30-33, 35-36 are considered allowable since when reading the claims in light of the specification, as per MPEP § 2111.01 or In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983), none of the references of record alone or in combination disclose or suggest the combination of limitations specified in the independent claims including using the correlation values (defined at e.g., pg. 18, 21-22).

The Examiner was persuaded by the arguments filed pertaining to the correlation values.

Any comments considered necessary by Applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2661

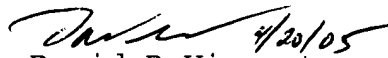
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David R Vincent whose telephone number is 571 272 3080. The examiner can normally be reached on M-TH.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Sough can be reached on 571 272 6799. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 4/20/05
David R Vincent
Primary Examiner
Art Unit 3628

April 20, 2005